which the matter would have if it were moving with the velocity of light in that matter.

This shows how infinitesimal is the fraction of the energy of the beam which is located in these waves of compression of the material.

The fraction is proportional to the intensity of the beam.

As an example, take a beam of the intensity of full sunlight just outside the earth's atmosphere, in which the energy flow is about $1{\cdot}4\times10^6$ ergs/sec. The energy density $\mu H_1^2/8\pi$ is therefore $1{\cdot}4\times10^6\div v$. Put $v = 3\times10^{10}/n$, where n is the refractive index. The fraction is

$$\frac{1}{4}\cdot\frac{1{\cdot}4\times10^6}{27\times10^{30}}\,\frac{n^3}{\rho}, \text{ or about } 1{\cdot}25\times10^{-26}n^3/\rho.$$

At the surface of the sun it would be about 40,000 times as much, say, $5\times10^{-22}n^3/\rho$.

It is interesting to note that if a beam of light is incident on any reflecting or absorbing surface and if the pressure of light is periodic with the waves it must give rise to ordinary elastic waves in the material of frequency double that of the light waves.

The Properties of Colloidal Systems.—II. *On Adsorption as Preliminary to Chemical Reaction.*

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